

Concld
a gate formed on said opposing side of the semiconductor chip, said gate being arranged on a channel region between said collector and said main emitter with a gate insulating film interposed between said channel region and said gate; and

9/2/90
a current sense terminal formed on said opposing side of the semiconductor chip, a potential of said gate being controlled according to an electric current passing through said current sense terminal,

wherein electrical current from said collector is made to flow to both said main emitter and said current sense terminal, and

electron injection efficiency at said main emitter and said current sense terminal is 0.73 or more.

DP
25. (Twice Amended) A voltage-driven power semiconductor device, comprising:
a chip-like injection enhanced gate transistor (IEGT) having a collector on one side, and further having a main emitter, a current sense terminal, and a gate on an opposing side which opposes said one side, said gate being arranged on a channel region between said collector and said main emitter with a gate insulating film interposed between said channel region and said gate, a potential of said gate being controlled according to an electric current passing through said current sense terminal, electrical current from said collector being made to flow to both said main emitter and said current sense terminal, and electron injection efficiency at said main emitter and said current sense terminal being 0.73 or more;

a plate-like collector electrode terminal arranged on said one side of said IEGT and electrically connected to said collector; and

a plate-like emitter electrode terminal arranged on said opposing side of said IEGT and electrically connected to said main emitter,

wherein said voltage-driven power semiconductor device is a press-contacting type package,

Concluded
said collector of said power semiconductor device is pressed by said plate-like collector electrode terminal so that said collector and said collector electrode terminal are electrically connected together, and

said main emitter of said power semiconductor device is pressed by said plate-like emitter electrode terminal so that said main emitter and said emitter electrode terminal are electrically connected together.

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Sub 21
27. (Twice Amended) A voltage-driven power semiconductor device, comprising:
a chip-like voltage-driven power semiconductor element having a collector on one side, a main emitter, a current sense terminal, and a gate on an opposing side which opposes said one side, said gate being arranged on a channel region between said collector and said main emitter with a gate insulating film interposed between said channel region and said gate, a potential of said gate being controlled according to an electric current passing through said current sense terminal, and electrical current from said collector being made to flow to both said main emitter and said current sense terminal;

a plate-like collector electrode terminal arranged on said one side of said power semiconductor device and electrically connected to said collector; and

a plate-like emitter electrode terminal arranged on said opposing side of said power semiconductor device and electrically connected to said main emitter,

wherein said voltage-driven power semiconductor device is a press-contacting type package,

Amended
said collector of said power semiconductor device is pressed by said plate-like collector electrode terminal so that said collector and said collector electrode terminal are electrically connected together, and

said main emitter of said power semiconductor device is pressed by said plate-like emitter electrode terminal so that said main emitter and said emitter electrode terminal are electrically connected together.

BA
Q1 Q2
29. (Twice Amended) A voltage-driven power semiconductor device, comprising:
a plurality of voltage-driven power semiconductor elements connected in series and in parallel, said power semiconductor elements including semiconductor chips and said semiconductor chips having collectors on one side, and main emitters, at least one current sense terminal, and gates on an opposing side which opposes said one side, said gates being arranged on a channel regions between said collectors and said main emitters with gate insulating films interposed between said channel regions and said gates, potential of said gates being controlled according to an electric current passing through said current sense terminal, and electrical current from said collectors being made to flow to both said main emitters and said at least one current sense terminal;

a plate-like collector electrode terminal arranged on said one side of said plurality of power semiconductor elements, and electrically connected to said collectors; and

a plate-like emitter electrode terminal arranged on said opposing side of said plurality of power semiconductor elements and electrically connected to said main emitters,

wherein said voltage-driven power semiconductor device is a press-contacting type package,

Cancelled
\$4

said collectors of said power semiconductor elements are pressed by said plate-like collector electrode terminal so that said collectors and said collector electrode terminal are electrically connected together, and

said main emitters of said power semiconductor elements are pressed by said plate-like emitter electrode terminal so that said main emitters and said emitter electrode terminal are electrically connected together.

31. (Amended) A voltage-driven power semiconductor device comprising:

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a plurality of voltage-driven power semiconductor elements connected in series and in parallel, said power semiconductor elements including semiconductor chips and said semiconductor chips having collectors on one side, and main emitters, at least one current sense terminal, and gates on an opposing side which opposes said one side, said gates being arranged on a channel regions between said collectors and said main emitters with gate insulating films interposed between said channel regions and said gates, potential of said gates being controlled according to an electric current passing through said current sense terminal, electrical current from said collectors being made to flow to both said main emitters and said at least one current sense terminal, and said gates being a trench-type gate embedded in said opposing side;

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a plate-like collector electrode terminal arranged on said one side of said plurality of power semiconductor elements, and electrically connected to said collectors; and

a plate-like emitter electrode terminal arranged on said opposing side of said plurality of power semiconductor elements and electrically connected to said main emitters;

wherein said voltage-driven power semiconductor device is a press-contacting type package,